

Table 2. Regression equations used to estimate median flows for uncontrolled stream segments on the Kansas Surface Water Register¹

[Chi², chi square statistical distribution; DA, drainage area in square miles; PREC, precipitation in inches; PERM, soil permeability in inches per hour; SLOPE, land-surface slope in degrees;
 $\log da = \log_{10}\left(\frac{DA}{1000}\right)$; $\log prec = \log_{10}\left(\frac{PREC}{28}\right)$; $\log perm = \log_{10}PERM$; $\log slope = \log_{10}\left(\frac{SLOPE}{2}\right)$]

Flow value	Equation	Chi ²	Standard error (log units)	Degrees of freedom
Median KSA (most-recent 10 years of record)	$Q_{KSA} = [10^{[1.74 + 1.088\log da + 4.867\log prec + 0.498\log perm + 0.513\log slope + 0.124(\log da)^2 - (16.154(\log prec)^2)]} - 1.4]$	295	0.285	143
Median AAH (entire period of record)	$Q_{AAH} = [10^{[1.689 + 1.127\log da + 5.298\log prec + 0.626\log perm + 0.515\log slope + 0.151(\log da)^2 + (-15.344(\log prec)^2)]} - 1.2$	337	.247	143

¹The Kansas Surface Water Register is maintained by the Kansas Department of Health and Environment (Topeka).